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Climate and meteorological data for forestry

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The EU-28 has approximately 182 million hectares of forests and other wooded land, corresponding to approximately 41% of its total area. In 2014 roundwood production in the EU-28 was 425 million m^3 (11.5 % of the world total), making the EU-28 the largest producer within the G20. Forest industry is important for many European countries' economy. For example, in Finland the forest industry is responsible of 22 % of export revenues. In addition to economic importance, the utilization of forest biomass has an important role in supporting EU countries to balance out their carbon dioxide emissions with absorption of greenhouse gases by forests. The increasing needs of forest biomass for the growing forest-based bioeconomy lead to increasing wood harvesting intensity in thinning and final felling areas, which will potentially increase the wind damage and other risks to these forests. Efficient forest damage risk management necessitates availability of comprehensive meteorological and climate data. As a component of the forestry dedicated project "Sustainable, Climate-Neutral And Resource-Efficient Forest-Based Bioeconomy (FORBIO)" funded by the Finnish Strategic Research Council a stakeholder workshop was organized aiming at mapping the needs of forestry stakeholders in respect of weather and climate data. The key requirements identified in respect of wind storms included issues such as:

- weather forecasts and warnings should include information both 10 minute and gust wind speed and wind direction and the spatial resolution should be EU NUTS 3 or higher and forecasts should contain information about the reliability of the forecast and an estimate about the possible magnitude of damage caused by the forecasted storm
- after the storm, information on the spatial coverage on the damaging winds is essential for planning of recovery activities
- climate scenarios covering both near future and extending until the end of this century, should include information on the possible change of extreme wind speeds and as well, possible change of wind direction, and the spatial accuracy of scenarios should be the same NUTS 3 as in case of forecasts
- the climate change scenarios should be formulated unambiguously in order to prevent risk of misinterpretation
- climate scenarios should include information also on other factors such as soil frost and soil wetness influencing on wind throw risk
- the high spatial resolution GIS dataset depicting 10 year level of maximum wind speed and information on the occurrence, frequency and strength of past storm during the recent decades was regarded as most valuable past climate data for the forest sector.

The recommendations postulated in the workshop give good guidance for the planning of research and as well, weather and climate service's activities.